

WHAT IS CLAIMED IS:

1. A rolling friction transmission apparatus of a wedge roller type comprising:

5 two parallel shafts which are mutually eccentric and are rotatably supported by a fixed part;

a rolling-surface-shaft which has a cylindrical rolling surface at an outer surface thereof and is disposed at one of said two parallel shafts;

10 a ring which has a cylindrical rolling surface at an inner surface thereof and is disposed at the other of said two parallel shafts; and

three transmission rollers which have cylindrical transmission surfaces at outer surfaces thereof respectively and are placed in contact with the rolling surfaces of said rolling-surface-shaft and said ring, in an unequally-spaced space generated between the rolling surfaces of said rolling-surface-shaft and said ring and with such a gap that said three transmission rollers are not in contact with each other,

20 two of said three transmission rollers being fixed rollers each of which is supported rotatably around a shaft fixed to said fixed part in parallel to said two parallel shafts,

the rest of said three transmission rollers being a wedge roller, said wedge roller being supported so that it can rotate while being parallel to axes of said fixed rollers and that it can move in the unequally-spaced space in a circumferential direction of the

unequally-spaced, said wedge roller being drawn into a spatial position between said rolling-surface-shaft and said ring in such a direction that the unequally-spaced space becomes narrower by tangential forces generated by torque, which acts between said  
5 rolling-surface-shaft and said ring, at contact points between the transmission surface of said wedge roller and each of the rolling surfaces of said rolling-surface-shaft and said ring,

normal forces being generated by a wedge effect of said wedge roller at the contact points, the normal forces causing normal forces  
10 even at contact points between each of the transmission surfaces of said fixed rollers and each of the rolling surfaces of said rolling-surface-shaft and said ring, to thereby transmit rotation between said rolling-surface-shaft and said ring without gross slip at the contact points,

15 wherein said wedge roller is placed at the spatial position where the unequally-spaced space is wider than that in a direction perpendicular to a direction of an eccentricity of said rolling-surface-shaft and said ring.